

REMARKS

This communication in response to the Office Action mailed on June 12, 2007. In the Office Action claims 1-14 were pending of which claims 1-14 were rejected.

The Office Action reports that claims 1 and 3-25 were rejected based on the article by Chu et al. entitled ("A Objective Measure for Estimating MOS of Synthesized Speech). Claim 1 recites a method for optimizing an objective measure used to estimate mean opinion score or naturalness of synthesized speech from a speech synthesizer. The method includes using an objective measure that has components derived directly from textual information of the text to be synthesized and the textual information of the scripts of the pre-stored stored speech segments. The objective measure has a high correlation with mean opinion score such that a relationship can be formed between the objective measure and corresponding mean opinion score. Importantly, claim 1 includes altering the objective measure to provide a different function of textual information derived from the utterances so as to improve the relationship between the scores of the objective measure and mean opinion score or subjective ratings of the synthesized utterances.

It is this last feature of claim 1 that clearly distinguishes the invention recited by claim 1 from the cited reference. The cited article was written by at least some of the inventor of the present application wherein the present invention recited by claim 1 builds upon that work in a new and non-obvious manner. In particular, the cited article describes an objective measure can be used measure the naturalness of synthesized speech directly from input text and scripts of speech database. However, what is not taught or suggested is how that objective measure can be optimized, which is recited in claim 1. In particular, the last feature recites altering the objective

measure to provide a different function of textual information derived from the synthesized utterances. The Examiner reports that this language is met by changing the weighting factors of components forming the objective measure in the article by Chu.

It was intended that use of the language "derived from textual information" in claim 1 would exclude merely changing the weighting factors of components forming the objective measure. Nevertheless, to clarify that simply altering the objective measure in this manner would not be covered by claim 1, the last feature of claim 1 has been amended to recite "altering the objective measure in a manner beyond only changing one or more weighting factors in the objective measure to provide a different function of textual information derived from the utterances so as to improve the relationship between the scores of the objective measure and subjective ratings of the synthesized utterances." (emphasis added) In their earlier work, Chu et al. simply do not teach or suggest optimization in the manner as recited by claim 1.

In contrast, the present application advances two techniques, by way of example, for optimizing the objective measure, which include optimizing the distance tables used to obtain the textual factors (see e.g., page 29, line 13 - page 31 - line 5 of the Specification) and/or including higher order components into the objective measure (see e.g. page 31, line 16 - page 32, line 30 of the Specification). These specific techniques are recited in dependent claims 3 and 4, respectively. It was reported that these features are taught by the description provided in Section 2 of the article; however, no specific citation was provided and none is believed present. Nevertheless, when these features are combined with the features recited now by amended claim 1, each of these claims is believed separately patentable.

Independent claim 25 includes features similar to those recited in claim 3 and 1, and furthermore, has been amended in a manner similar to claim 1. Thus, for at least the reasons discussed above with respect to claims 1 and 3, it is believed this claim is also allowable.

The remaining dependent claims recite further features that when combined with their respective independent claim and any intervening claims each is believed to be separately patentable.

The foregoing remarks are intended to assist the Office in examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered exhaustive of the facets of the invention which are rendered patentable, being only examples of certain advantageous features and differences, which applicant's attorney chooses to mention at this time. For the foregoing reasons, applicant reserves the right to submit additional evidence showing the distinction between applicant's invention to be unobvious in view of the prior art.

Furthermore, in commenting on the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the same and the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims.

In view of the foregoing, reconsideration and allowance of the application as amended is respectfully requested.

An extension of time is hereby requested for responding to the Office Action. An online charge authorization for the extension of time fee is included herewith.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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